2003

Good Intentions May Doom Aspen Groves

James R. Fazio

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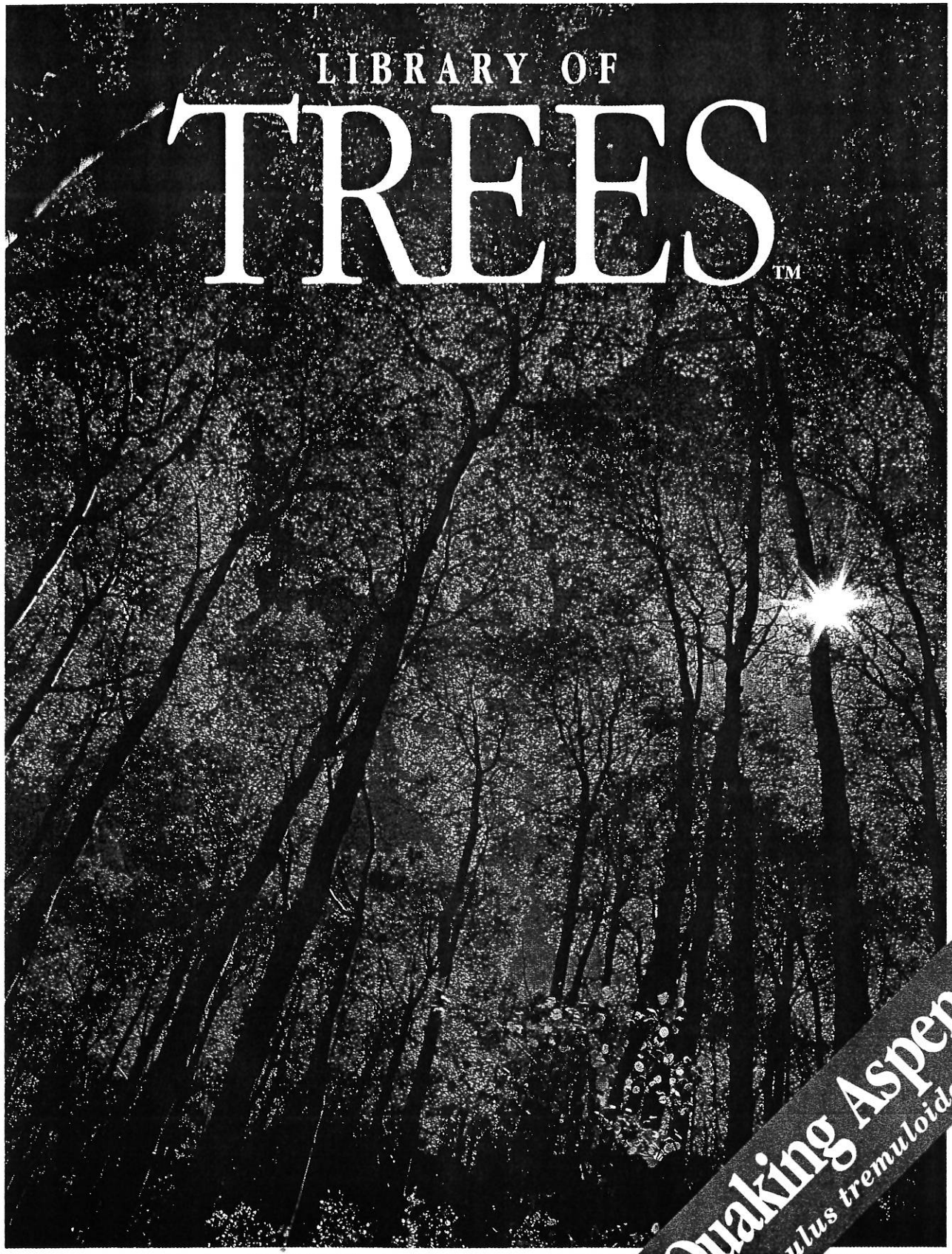
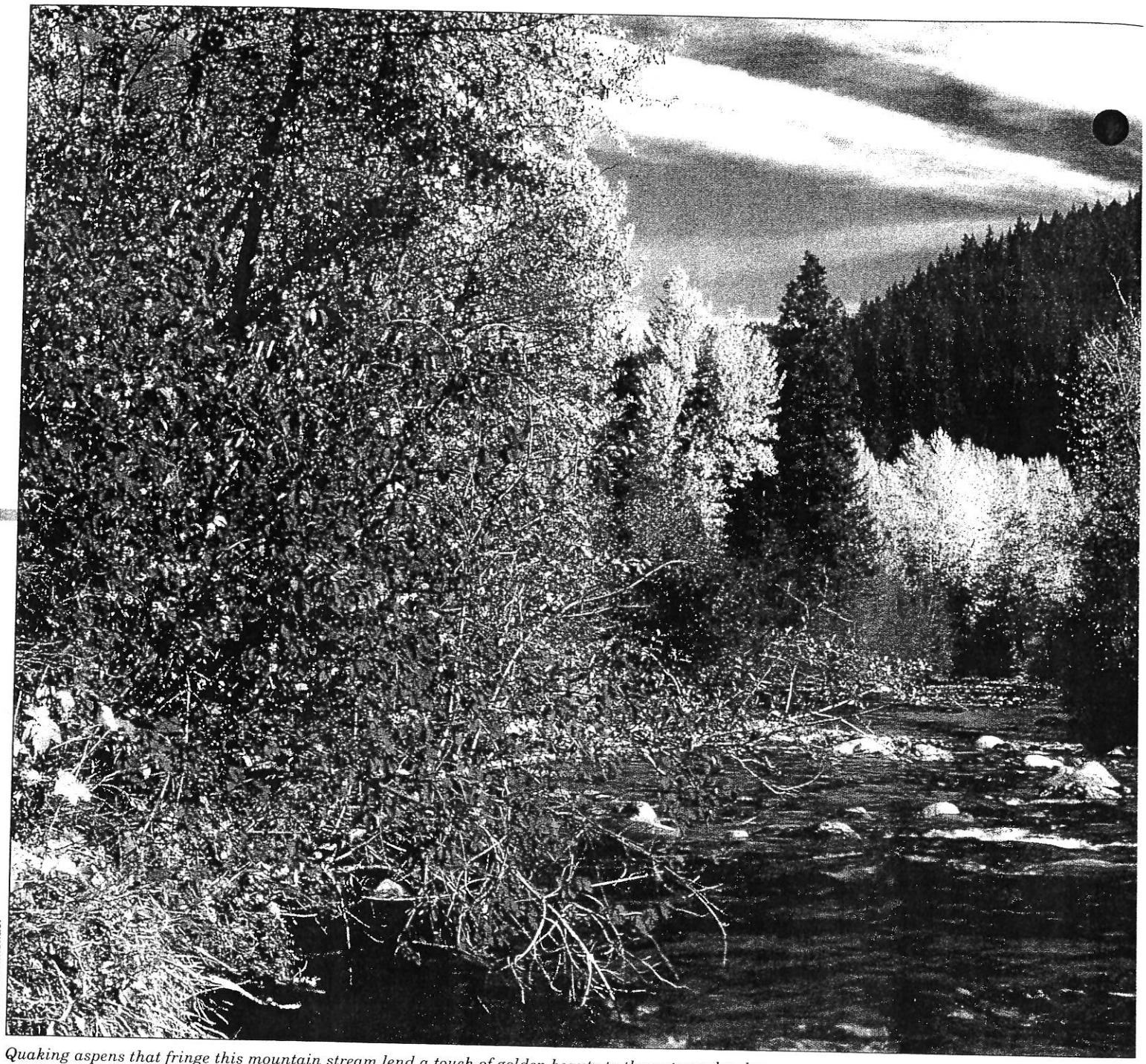


Quaking Aspen

Populus tremuloides



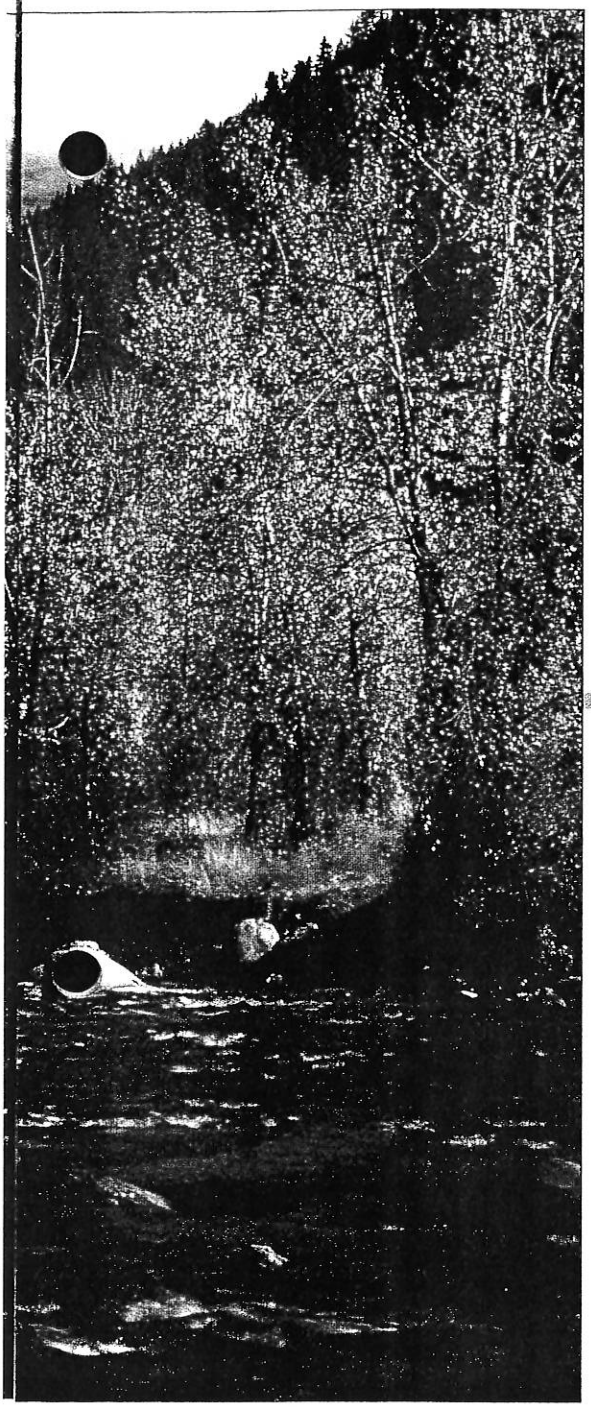
JH Pete Carmichael

Quaking aspens that fringe this mountain stream lend a touch of golden beauty to the autumn landscape.

If there were a *Guiness Book of World Records* for trees, quaking aspen would be in it – not once but probably several times. Quaking aspen's most notable claim to fame is in having the widest natural range of any tree in North America. Guy Sternberg and Jim Wilson point out in *Landscaping With Native Trees* that this beautiful species can be found covering 47 degrees of latitude (that is half the distance from the equator to the top or bottom of the earth), 110 degrees of longitude (nine time zones), and elevations from sea level to timberline! This vast area includes country from New Jersey to Newfoundland and across the lower and mid-portions of Canada to Alaska and south to Mexico.

As if that weren't enough, aspen holds title to the strange claim of being the largest living organism. Not even whales and sequoias can top this one. The reason is that aspens grow in stands (called clones) and reproduce primarily by sending up sprouts from their roots. This means that virtually all the trees in a clone are connected. Again, Sternberg and Wilson point out that one clone in Utah has 47,000 stems. It is estimated that this interlinked organism weighs 6,000 tons, or three times more than the world's single largest tree.

And how about age records? While individual aspen trees live a vigorous but short life (100 - 150 years is extremely old for an aspen), a clone in Minnesota has been esti-



mated to be 8,000 years old, making it one of the oldest living things on earth.

In addition to all else, quaking aspen is a beautiful and useful tree. It is not a tree for all places, but on the right sites it can delight the eye with misty green in early springtime to stunning gold in the crisp days of autumn. Its trembling leaves add movement to the landscape and a soft, pleasant sound. And it is host to myriad birds, mammals and butterflies.

A Far-reaching Beauty

Among the Trees

Good Intentions May Doom Aspen Groves

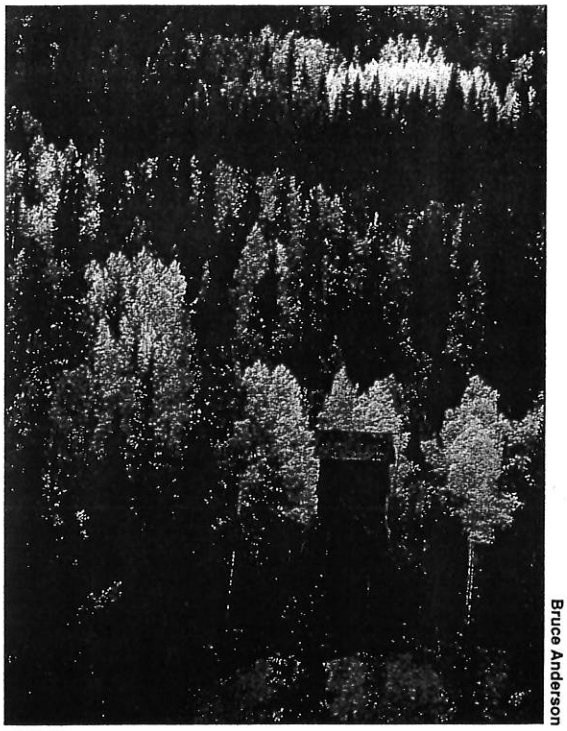
By James R. Fazio, Editor
The National Arbor Day Foundation *Library of Trees*

Sometimes it is best to keep hands off nature. This was the idea behind the creation of national parks, wilderness areas, and a good many nature preserves. But sometimes the notion of *laissez faire* can backfire. That is the case with the West's disappearing aspens.

Change in the extent of aspen groves, or clones, is pretty easy to measure. Photos from years ago are compared with modern photos and any differences in area are calculated. From this and historical records, we know that the area occupied by quaking aspens has declined by 60 to 90 percent since settlers arrived from Europe. Some of this decline is due to roads, homes, and other land conversion, but most of it is due to well-intentioned but misguided management practices.

According to an article by Charles E. Kay in the August 1997 *Journal of Forestry*, there are two main reasons for this alarming situation. One is the overzealous control of fires and the other is the lack of control on grazing animals—wild and domestic.

For thousands of years, the Native Americans routinely set fires to the grasslands and forests of the West. There were various reasons for this, not least of which was to keep the land open and grassy so that game animals would thrive and be close to areas of human habitation. These fires were set in the spring or fall, the only time of the year when fire will travel through aspen stands, and they burned at frequent intervals, thus burning lightly instead of as roaring infernos. Although they were set more for the open grasslands, the fires also moved through any (continued on p.7)



Bruce Anderson

Without management intervention, large stands of pure quaking aspen will continue to vanish as shade-tolerant conifers crowd out the sun-loving aspens.

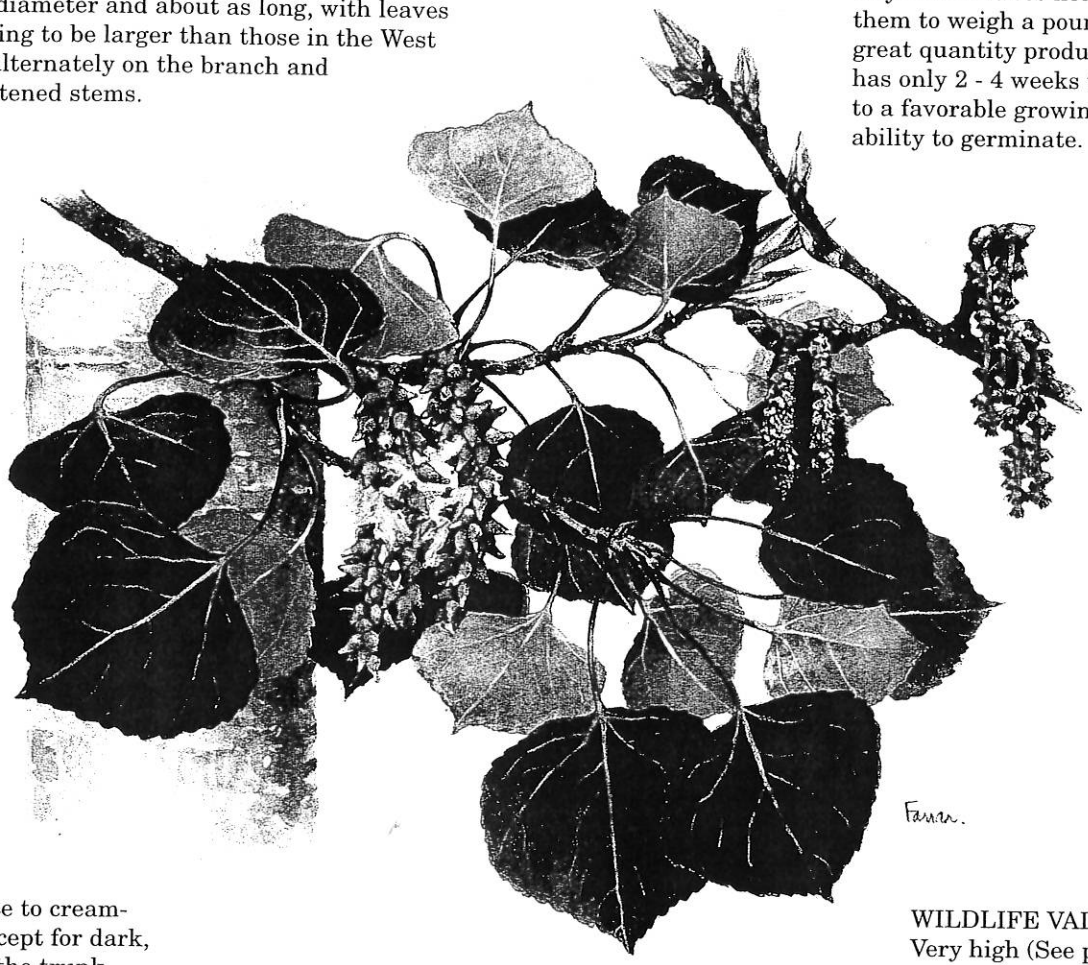
Quaking Aspen

Populus tremuloides

LEAVES: Usually broadly oval or tending toward triangular in shape, but sometimes almost round and always with finely-toothed margins. The surfaces are deep green above and lighter beneath, with foliage changing from mint-green in spring to golden in autumn. Size ranges from 1-1/2 inches to 3 inches in diameter and about as long, with leaves on eastern trees tending to be larger than those in the West or North. Arranged alternately on the branch and mounted on long, flattened stems.

Seeds Aplenty, but...

Thousands of seeds are produced when a quaking aspen reaches abou 15 years of age. The seeds are so tiny that it takes nearly 4 million of them to weigh a pound! Despite the great quantity produced, each seed has only 2 - 4 weeks to make its way to a favorable growing site or lose its ability to germinate.



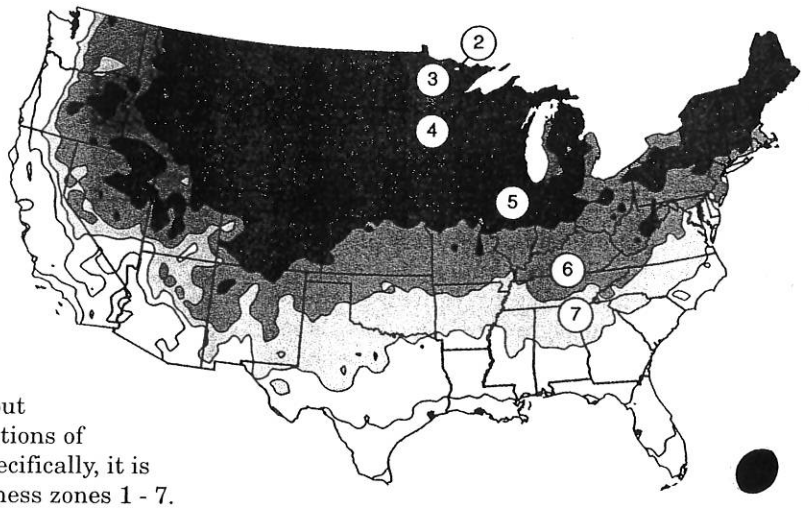
ROOTS: Shallow, fibrous and wide-spreading, producing additional trees through root suckers.

BARK: Greenish-white to cream-colored and smooth except for dark, horizontal patches on the trunk. With age, the bark darkens and becomes vertically furrowed.

Bruce Anderson

WILDLIFE VALUE: Very high (See page 6 for more information).

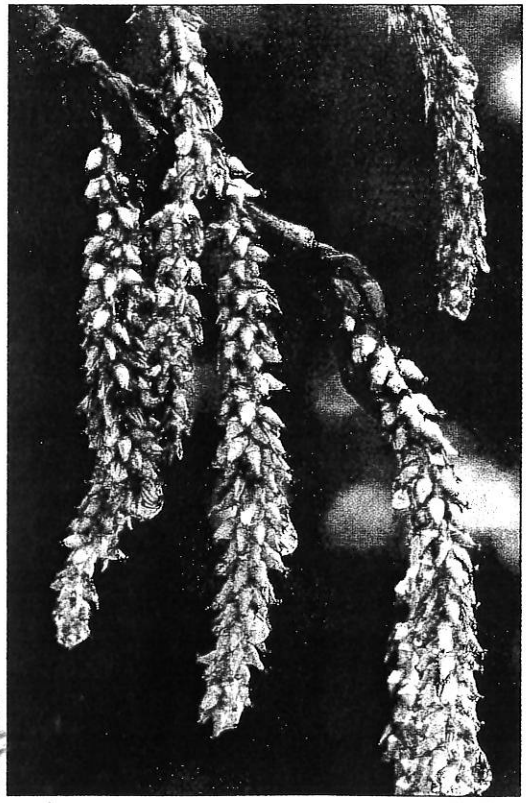
Where Quaking Aspen Can Grow



Where soil and other site conditions are suitable, quaking aspens can be planted throughout all but the warmest sections of our country. Specifically, it is suited for hardiness zones 1 - 7.

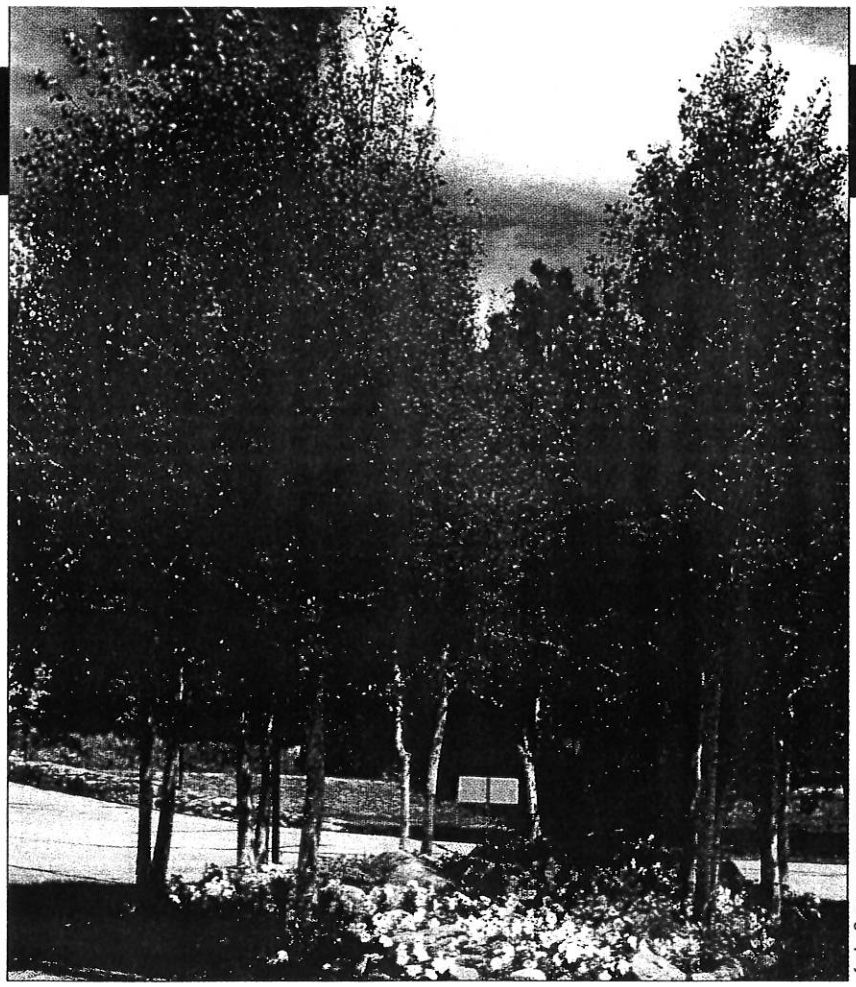
Whit Bronaugh

FORM: A fast-growing, medium-sized tree that usually matures at 40 - 50 feet in height with a 25-foot spread. A long, slender trunk supports a pyramid-shaped crown when young but it becomes rounded at maturity.



Ned Therrien

FLOWERS AND SEEDS: Long, silvery catkins produce small, male and female flowers on separate trees. After flowering, the female catkins form capsules from which tiny seeds are dispersed by the wind on cottony tufts late in spring.



Horticultural Photography

Quaking aspen can lend a special beauty to a home landscape, but you must be prepared to deal with the removal of unwanted sprouts.

How to Grow Quaking Aspen

Planting a quaking aspen will provide you with a full grown tree in an amazingly short period of time. Once established, a young tree will often put on several feet of new growth each year until it begins to reach maturity. It is less exacting than many species, but planting it in the right place will definitely contribute to its vigor and health. Here is what to look for in a good site for aspen:

- ✔ Full sunlight
- ✔ Soil that is strongly to slightly acid (pH 4.8 - 6.5)
- ✔ Moist but well-drained soil, although aspen tolerates soil types ranging from coarse, rocky conditions to loamy or silty sands or even heavy clays
- ✔ Sites protected from soil compaction
- ✔ Sites not subjected to flooding

What About Sprouts?

When growing aspen, root sprouts are a fact of life. Fortunately, when they crop up in lawns, they are easily mowed along with the grass. Elsewhere, such as in planting beds, the choice is either to pull them out or let them develop into a grove of more aspens.

As Useful As it Is Beautiful . . .

Bruce Anderson

Quaking aspens brighten the autumn landscape for recreationists. Throughout the year, this useful species also serves as a favorite place for wildlife and a source for commercial wood products.

Quaking aspen can be thought of like a practical work of art. Its contributions are unarguably visual, but they don't stop there.

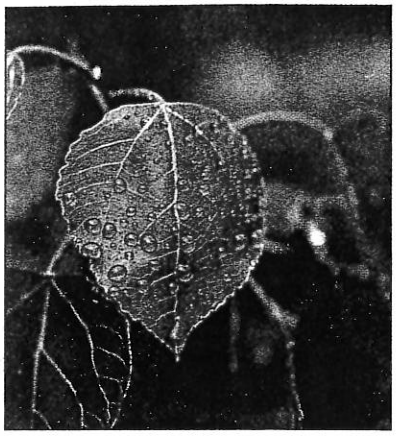
Aspens present some of the nation's most spectacular 'post card views' and form an exhilarating backdrop in many recreation areas. To the trained eye, they are also centers of unusually high biodiversity. For example, bird surveys near Banff, Alberta, found 35 breeding species in aspen stands compared with fewer than 15 in other nearby forest types. Leaf buds, especially in winter, are an especially important attraction for grouse and some other birds. The soft wood makes a good place for those that need cavities for their nests. These include downy woodpeckers, black-capped chickadees and yellow-bellied sapsuckers. The aspens are also a mainstay for beavers and a favorite browse plant for deer, elk and moose and a host of small mammals ranging from snowshoe hares to porcupines. They are even listed among the species attractive to butterflies, and bees use resin from newly emerging leaves to make a substance for patching hives.

The wood of aspen is weak, but nonetheless served as the walls for many a pioneer cabin and even more pioneer furniture. Today it is used as pulp for paper manufacturing and its shredding properties make it ideal for the excelsior used as packing material. Another attribute is that it cuts smoothly, without splintering. This makes it useful for small, miscellaneous products such as toys, tongue depressors, popsicle sticks, clothes pins and crates.

A chemical known as salicin once made it an important medicinal tree for the Indians and early settlers. The substance is contained in the tree's inner bark and was used like aspirin. It didn't taste too good, but it also helped relieve coughs, fevers and menstrual cramps. ■

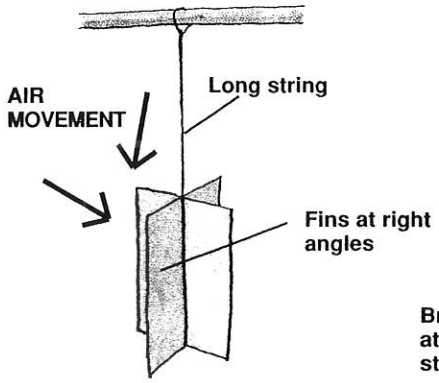
Why Does An Aspen Leaf Quake?

When the leaves of quaking aspen move in the slightest wind, what does it bring to mind? Some people see shimmering waters or ripples in a stream. One romantic writer likened it to "thousands of butterfly wings." Romance aside, there is a scientific explanation for the namesake quality of this tree.

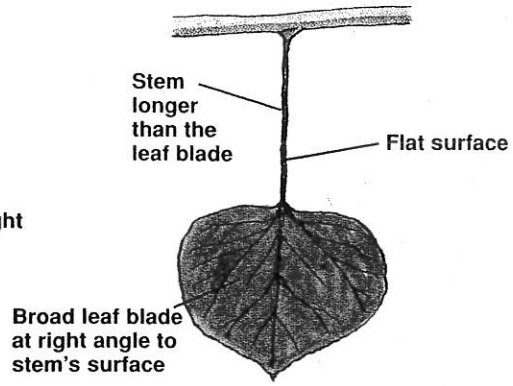


Ned Therrien

Imagine a device designed to move in the slightest movement of air. It might look like this:



An aspen leaf is such a device, designed by nature and moved by the slightest breeze.



Among the Trees

(continued from Page 3)

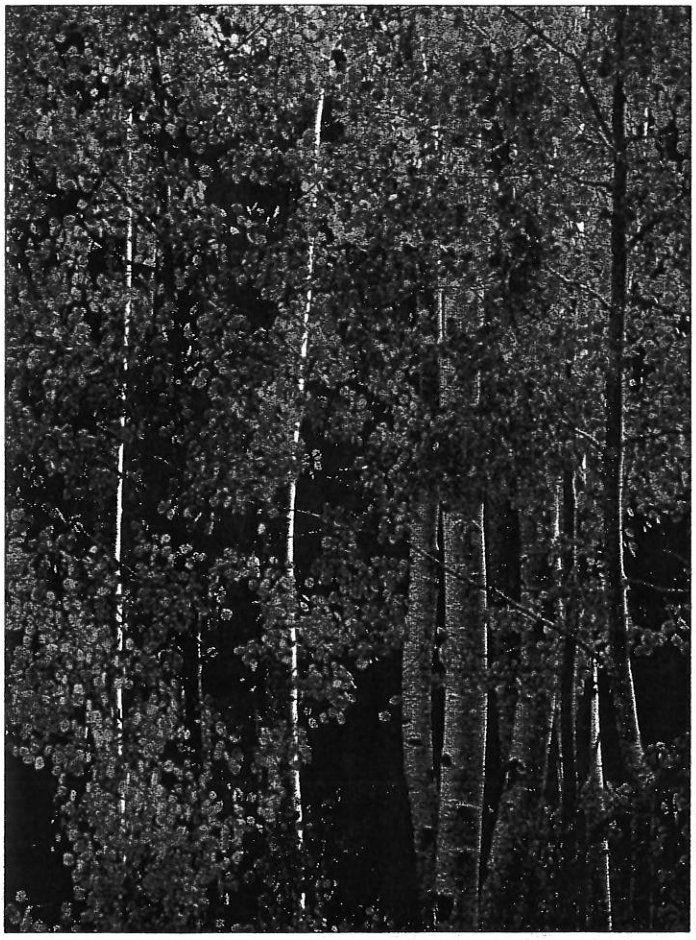
adjacent aspen stands. As they did, they killed shade-tolerant conifers that often creep into the stands and eventually shade out the sun-loving aspens. The fires also stimulated root suckers, thereby creating a healthy mix of young and old aspen trees in the stand. With the prevention and suppression of wildland fires in the past 100 years, this symbiotic relationship of local people and the land came to an end. As a result, conifers are taking over the aspen stands.

Aspens and wildlife normally go together like hand and glove. Mountain men once searched for the ribbons of aspens to know where to set their beaver traps. Deer and elk still do find food there, browsing on the tender shoots of trees both old and young and sometimes gnawing on the bark. In the days of old, this damage from dining was more than compensated for by new growth being added by the trees. That is, until wolves and other predators were removed that helped control the population of browsing animals and livestock animals were added to the mix of deer and elk. In some areas, such as national parks, the prohibition of hunting further exacerbated the situation.

If we as a society want the continued visual and ecological benefits provided by aspen clones in the West, management strategies will have to change. Scientists recommend three ways to save the aspens:

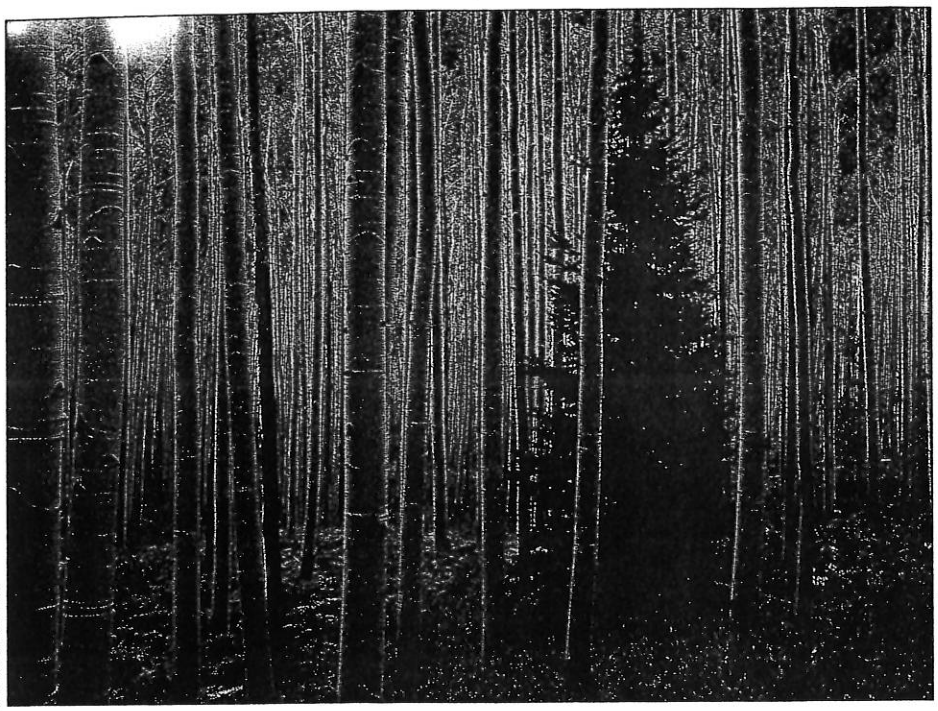
1. Reintroduce prescribed fire on aspen sites where invading conifers are present (about two thirds of all aspen areas in the West). Another option is to log the sites, which adds some economic benefits and would have much the same effect as fire if done properly and carefully.
2. Reduce livestock grazing to moderate levels that can be tolerated by aspen stands.
3. Control game animal populations either through hunting or allowing the return of wolves and other natural predators.

Of course, it is relatively easy to understand the problem of vanishing aspens and prescribe a cure. It is quite another to work through the politics and economics to implement the suggestions. After the facts are on the table it is always a matter of choices. Personally, I hope these choices will help assure that the green and gold islands of aspen will forever be part of our western landscape.



Bruce Anderson

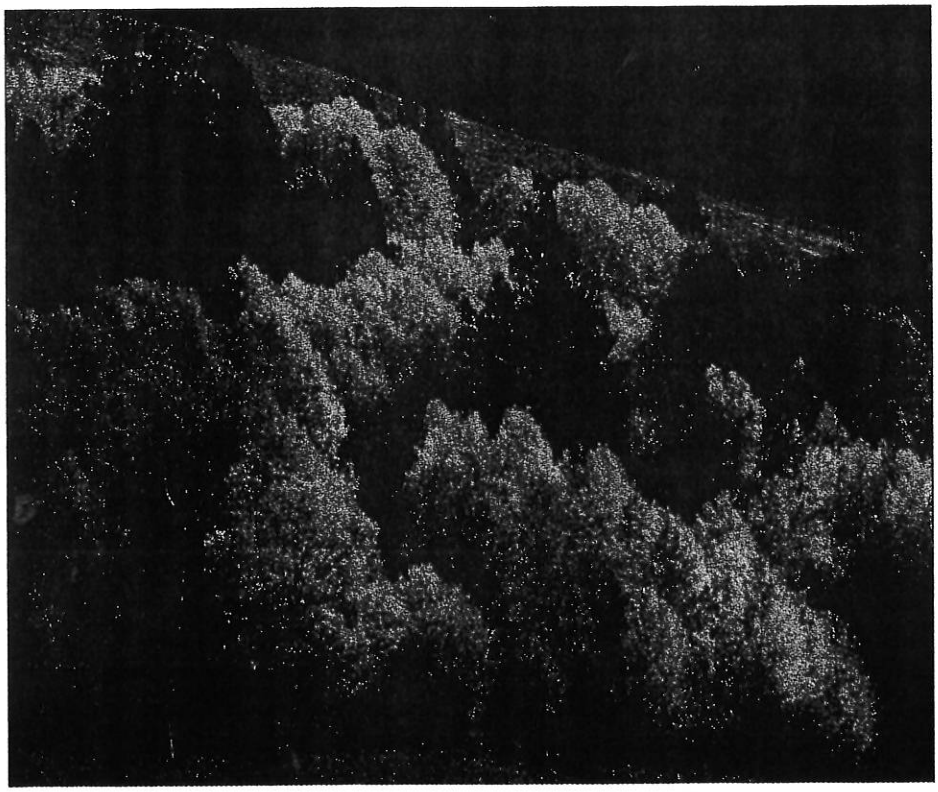
While most quaking aspens turn a golden yellow in the autumn, color variations can range to red-orange.



Charles Gurche

Appropriate Names

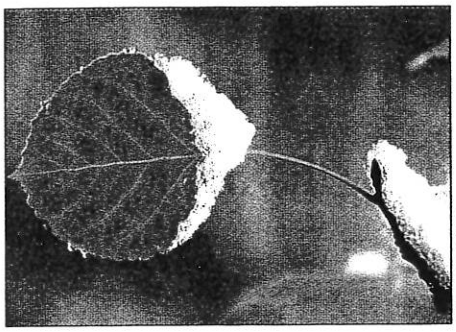
The Onondagas are said to have called quaking aspen "nut-ki-e," meaning "noisy leaf." One could argue whether the gentle shhhhh of the canopy is noise or soothing music, but sound does seem like an appropriate way to name this tree. Movement is the trait that has given us its modern names, quaking or trembling aspen. This is reflected in the Latin name for Europe's aspen, *tremula*, which means, not surprisingly, quaking or quivering. Our aspen, *tremuloides*, means it resembles that species. The Latin name for the genus, *Populus*, is said to mean "people" and was used because the many moving leaves in the canopies of trees in this genus resemble a moving populace. Early loggers used a variation of poplar for the name they gave to aspens — popple.



Charles Gurche

Champion Trees — East and West

Quaking aspens live fast and dramatic lives, but neither longevity nor size are this tree's claims to fame. One hundred years is old for an individual aspen. The tallest one in the eastern United States is found in Ontonagon County, Michigan, and is 109 feet in height. According to American Forest's *National Register of Big Trees*, this large aspen is approximately 3 feet in diameter. A slightly taller one (114 feet) is found in the Coronado National Forest in Arizona and is also 3 feet across the trunk.



Whit Bronaugh

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Cover Photo: Sunlight filtering down through a stand of quaking aspen is captured on film by Bruce Anderson.

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